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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/091,508	10/30/1998	JAMES T. CONNORS	68567/PALL	5023

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EXAMINER	
OCAMPO, MARIANNE S	
ART UNIT	**PAPER NUMBER**
1723	25

DATE MAILED: 07/19/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/091,508	CONNORS ET AL.1	
	Examiner	Art Unit	
	Marianne S. Ocampo	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 April 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 14-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 14-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 October 1998* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4-29-02 has been entered.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the separation element comprising two or more hollow pleated pack sections with open joiner caps attached to at least one end of each of the two or more hollow pack sections, as in claim 1 must be shown or the feature must be canceled from the claim. **No new matter should be entered.**

3. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1 and 14 - 19 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

a). Claim 1 recites the limitation "**the open joiner caps** and the end caps **including a polymeric, thermoplastic or elastomeric material**", in the last two lines of the claim. This newly added limitation is considered **new matter**. There is no support for the **open joiner caps including (i.e. "*being formed of*") a polymeric, thermoplastic or elastomeric material**, as now claimed. In addition, the added limitation of **end caps including thermoplastic material**, is also considered **new matter**. There is however sufficient support for the end caps (first or second end caps of the separation arrangement/element) to be formed of/include only *polymeric or elastomeric material,* as in the specification page 33.

b). Claims 14 – 19 are dependent claims of claim 1, and thus, they also suffer the same defects since they depend therefrom.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1 and 14 – 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rosaen (US 3,984,325) in view of Driscoll et al. (US 4,517,085), Stoyell et al. (US 5,543,047) and Pall (US 4,228,012).

8. Concerning claim 1, Rosaen (325) discloses a separation element (28, 22, 24, 24') comprising two or more hollow pleated pack sections (22, 24, 24'), each pack section including a porous medium having a plurality of pleats (28) and first and second ends, wherein the plurality of pleats includes roots, crowns, legs extending between roots and crowns, an inner periphery at the roots defining an upstream side and an outer periphery at the crowns defining a downstream side, and open joiner caps (38, 32) being attached to at least one end of each of the two or more pack sections (22, 24, 24'), and further the separation element comprising first and second end caps (upper end cap 32 & lowest end cap 30) attached to the hollow separation arrangement wherein one of the first and second end caps (32, 30) comprises a seal (34) having an outside

diameter greater than the largest outside diameter of the hollow separation arrangement, as in figs.1 – 2 and 6 and in cols. 2 – 4.

9. Rosaen fails to disclose each pleat has a height h greater than (D-d)/2 where D is the outer diameter at the outer periphery of the plurality of pleats, and the porous medium comprising a polymeric or glass fiber material, adjacent open joiner caps being secured to coaxially connect the pack sections and open joiner caps into a hollow separation arrangement and the open joiner caps and end caps including polymeric, thermoplastic or elastomeric material. Driscoll et al. (085) teach a separation element (10) for separating one or more components from a fluid flowing therethrough, wherein the separation element comprises two or more hollow pack sections (18, 94), open joiner caps (20,104) attached to at least one end of each of two or more pack sections (as in fig. 3), adjacent joiner caps (20, 104) being secured to coaxially connect the pack sections and open joiner caps into a hollow separation element up to any length depending on the number of hollow pack section (filter module, 18, 94) to be connected together as desired by the user, which include a length of at least about 40 inches, and the interior diameter of each hollow pack (i.e. hollow separation element) may be at least about 2 inches depending upon the number of spirals or windings around the tube (90) of filter material (94), which would be dependent upon the amount of fluid to be filtered therethrough and extent of filtration (purity of fluid) desired, as in cols. 3 – 4 and fig. 3. It is considered obvious to one of ordinary skill in the art to modify the joiner caps of the filtration device/separation element of Rosaen, by substituting them with those taught by Driscoll et al., in order to provide an

alternative design for the filtration device/separation element, as well as provide an improved serially arranged separation element/filtration device which allows for a continuous serial treatment of a fluid being passed therethrough, thereby giving a much cleaner fluid after filtration/treatment by the hollow separation element/filtration device.

10. Rosaen, as modified by Driscoll et al., fails to disclose each pleat has a height h greater than (D-d)/2 where D is the outer diameter at the outer periphery of the plurality of pleats, and the porous medium comprising a polymeric or glass fiber material, and the open joiner caps and end caps including polymeric, thermoplastic or elastomeric material. Stoyell et al. (047) teach a filter element/pack section (10) having a plurality of pleats (11) including roots (11c), crowns (11b), legs extending between the roots and the crowns, an inner periphery at the roots defining an upstream side and an outer periphery at the crowns defining a downstream side, and wherein each pleat (11) has a height h greater than (D-d)/2 where D is the outer diameter at the outer periphery of the plurality of pleats, and having first and second ends and a porous medium (12) comprising a polymeric or glass fiber material, as in figs. 1 – 4 and cols. 3 – 5. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the filter/separation element of Rosaen as modified by Driscoll et al., particularly each pack section in lieu of the pack section/filter element taught by Stoyell et al., in order to provide an improved filtering/pack section/separation element having increased surface area which increases the useful life of the filtering/separation element or pack section, as well as having greater resistance to damage, as in col. 16, lines 49 – 63.

11. Rosaen, as modified by Driscoll et al. and Stoyell et al., fails to disclose the open joiner caps and end caps also comprising polymeric, thermoplastic or elastomeric material. Pall (012) teaches a filter comprising a plurality (two or more hollow pack sections of pleated/corrugated polymeric filtering medium) of hollow pack sections, each pack section having a plurality of pleats (by being corrugated) and a porous medium (86) comprising a polymeric material (polyamide), and further comprising joiner caps (40, 41) and end caps (90, 41, 40, 100) comprising polymeric, thermoplastic or elastomeric material, as in figs. 5 – 7 and cols. 7 – 9. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the joiner caps and end caps of the filter element/separation element of Rosaen, as modified by Driscoll et al. and Stoyell et al., in lieu of the joiner caps and end caps taught by Pall (012), order to provide an alternative and improved design for a separation element (having plurality of hollow pack sections connected together) which can be easily and rapidly assembled end to end by press-fit and detached by pulling or prying, thereby having joiner caps and end caps which are self-locking, simple to use, effective and inexpensive means for coupling, as in col. 5, lines 33 – 52.

12. With respect to claim 14, Rosaen also discloses each pack section (22, 24, 24') having a core disposed along the inner periphery of the pleats (28), as in fig. 3.

13. Regarding claim 15, Rosaen, as modified by Driscoll et al., fails to disclose each pack section being free of a core. Stoyell et al. teach the pack section/filter element (10) having a core (20) for supporting the inner periphery of the pack section/element (10), and alternatively, the pack section (10) may be free of a core (20), particularly when the fluid flow through the pack section (10) is primarily from inside to outside, in the instance that radial inward forces on the pack section (10) are low or absent and having a core (20) would then be unnecessary, as in cols. 7, lines 61 - 67 and 8, lines 1 – 11. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the pack sections of the separation element of Rosaen, as modified by Driscoll et al, such that each pack section is free of a core, as taught by Stoyell et al., in order to provide a filtering element which is more light weight, particularly in instances where the separation element is used when radial inward forces on the pack sections are low or absent and having a core (20) would then be unnecessary, such as when fluid flow through the separation element/pack sections are directed from inside to outside of the element/pack sections, as in col. 8, lines 7 - 11.

14. Concerning claim 16, Rosaen further discloses the end cap (32) having a seal (34) comprising an open end cap including a substantially cylindrical configuration having an outer periphery and a channel circumferentially arranged in the outer periphery and the seal (34) being positioned in the channel, as in figs. 1 – 2 and 6.

15. With regards to claim 17, Rosaen, as modified by Driscoll et al., fails to disclose each pack section being free of a core. Stoyell et al. teach the pack section/filter element (10) having a core (20) for supporting the inner periphery of the pack section/element (10), and alternatively, the pack section (10) may be free of a core (20), particularly when the fluid flow through the pack section (10) is primarily from inside to outside, in the instance that radial inward forces on the pack section (10) are low or absent and having a core (20) would then be unnecessary, as in cols. 7, lines 61 - 67 and 8, lines 1 – 11. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the pack sections of the separation element of Rosaen as modified by Driscoll et al., such that each pack section is free of a core, as taught by Stoyell et al., in order to provide a filtering element which is more light weight, particularly in instances where the separation element is used when radial inward forces on the pack sections are low or absent and having a core (20) would then be unnecessary, such as when fluid flow through the separation element/pack sections are directed from inside to outside of the element/pack sections, as in col. 8, lines 7 - 11.

16. Regarding claim 18, Rosaen as modified by Driscoll et al., fails to disclose the legs of the pleats are in intimate contact along substantially the entire height of the pleats. Stoyell et al. also teach the legs of the pleats (11) are in intimate contact along substantially the entire height (i.e. also known as in "laid over state") of the pleats (11), as in col. 4 and figs. 2 – 3. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the pleated filter medium/pack sections of Rosaen as modified by Driscoll et al., in lieu of the

pleated filter medium/pack section (10) taught by Stoyell et al., in order to in order to provide an improved filtering/pack section/separation element having increased surface area which increases the useful life of the filtering/separation element or pack section, as well as having greater resistance to damage, as in cols. 4, lines 22 – 29 and 16, lines 49 – 63.

17. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rosaen, Driscoll et al. (085), Stoyell et al. and Pall (012), as applied to claim 1 above, and further in view of Pall (US 4,033,881).

18. Concerning claim 19, Rosaen, as modified by Driscoll et al., Stoyell et al. and Pall (012), fails to disclose the adjacent joiner caps being welded together. Pall (881) teaches a filter/separation element comprising two or more hollow pleated pack sections (10, 25) being joined by joiner/end caps (16, 17) to form a hollow separation arrangment, wherein adjacent joiner caps (right end cap 16, second end cap 17 attached to right end cap 16) are welded together, as in figs. 2 – 3 and cols. 5 – 6, particularly, in col. 6, lines 28 – 34. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the adjacent joiner caps of the separation element of Rosaen, as modified by Driscoll et al., Stoyell et al. and Pall (012), in lieu of the welded adjacent joiner caps taught by Pall (881), in order to provide an alternative design and improved separation element having joiner caps which are more leak-proof than those having seals/gaskets joining separate joiner caps together, thus avoiding any

contaminated/unfiltered fluid leaking into the cleaned/filtered fluid region of the separation element.

Response to Arguments

19. Applicant's arguments with respect to claims 1 and 14 - 19 have been considered but are moot in view of the new grounds of rejection. **This action is non-final.**

Conclusion

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents 6,224,767B1 (Fujiwara et al.), 3,633,757 (Madern), 4,609,465 (Miller), 4,422,790 (Gebert et al.) and 5,851,267 (Schwartz).

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne S. Ocampo whose telephone number is (703) 305-1039. The examiner can normally be reached on Mondays to Fridays from 8:00 A.M. to 4:30 P.M..

22. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on (703) 308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

23. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

M.S.O.
July 9, 2002

MATTHEW O. SAVAGE
PRIMARY EXAMINER